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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,705	09/27/2000	Gerhard Reichert	1663-L	6878

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EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/670,705	Applicant(s) REICHERT, GERHARD	
	Examiner John L. Goff	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6, 8-17, 19-23, 25-28, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 8-17, 19-23, 25-28, 30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment received on 3/12/04. The previous 35 USC 112 rejections have been overcome.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-3, 5, 6, 8-17, 19-23, 25-28, 30, and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 19 require “the primary sealant being a sealant that remains flowable” and “the secondary sealant a sealant that becomes non-flowable after curing”. Claim 26 requires “the primary sealant being a flowable material” and “the secondary sealant being non-flowable after curing”. There is no disclosure in the specification as to the primary sealant being a sealant that is/remains flowable. Furthermore, there is no disclosure in the specification as to the secondary sealant being a sealant that is non-flowable after curing. It appears applicant intends to limit the primary sealant to a sealant that may be melted (i.e. made flowable) after its application, and applicant intends to limit the secondary sealant to a sealant that is permanently set/cured (i.e. can no longer be made flowable) after its application. However, regarding the primary sealant the specification discloses:

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“Primary sealant 24 forms a moisture/vapor barrier that hermetically seals insulating chamber 18 from the air surrounding glazing unit 10. Primary sealant 24 is thus one of a variety of sealants that form a long-lasting moisture/vapor seal when applied to a smooth glass surface. **One such primary sealant 24 is hot melt butyl. Another primary sealant 24 is polyisobutylene. In other embodiments of the invention, a curable hot melt material may be used as primary sealant 24.** Another primary sealant may be a dual seal equivalent. Other primary sealants 24 known to those skilled in the art may also be used to hermetically seal chamber 18.” (Emphasis added)

Thus, it appears applicant only has support to claim the primary sealant is selected from the group consisting of hot melt butyl, polyisobutylene, or curable hot melts. It is being noted

“curable hot melts” appears to require a thermoset material.

Regarding the secondary sealant the specification discloses:

“Secondary sealant 26 is preferably a structural sealant that provides structural support between glazing sheets 14 and 16. **Secondary sealant 26 may be a thermoset sealant such as a silicone sealant, a polysulfide sealant, a polyurethane sealant, or the like.** Other sealants known to those skilled in the art that cross link to the glass may be used as secondary sealant 26.” (Emphasis added)

Thus, it appears applicant only has support to claim the secondary sealant is selected from the group consisting of silicone, polysulfide, or polyurethane sealants.

4. Claims 1-3, 5, 6, 8-17, 19-23, 25, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 1 and 19 require “the primary sealant being a sealant that remains flowable” and “the secondary sealant a sealant that becomes non-flowable after curing”. Claim 26 requires “the primary sealant being a flowable material” and “the secondary sealant being non-flowable after curing”. It is unclear what is meant by a primary sealant that remains flowable. Applicant is asked to clarify what is required by the claims.

Claim Rejections - 35 USC § 102

6. Claims 1, 5, 6, 9, 11-14, and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Town (U.S. Patent 6,002,521).

Town is directed to fabricating an insulating glazing unit. Town teaches the method comprises providing first and second glazing sheets, connecting a spacer (free of sealant) to the first and second glazing sheets using an adhesive such that an outwardly-facing channel is formed between the glazing sheets and the spacer and an insulating chamber is formed inward of the spacer between the glazing sheets, hermetically sealing the insulating chamber by applying a primary sealant into the outwardly-facing channel where the primary sealant extends entirely across the channel from the first glazing sheet to the second glazing sheet, and applying a secondary sealant into the outwardly-facing channel after the primary sealant is applied (Figures 1-11 and Column 4, lines 53-57 and 64-67 and Column 8, lines 10-14 and 45-48 and Column 9, lines 46-60 and Column 10, lines 44-57 and Column 11, lines 42-53). Town teaches the spacer may be formed of materials well known in the art including metal (Column 8, lines 15-19), the spacer may have a pair of notched corners (Figure 10), and the spacer may carry a desiccant (Column 8, lines 23-25). Town teaches the primary sealant may comprise materials exhibiting good adhesion to metal or plastic spacers including thermoplastic materials (e.g. polyisobutylene) or thermosetting materials (e.g. silicon or polyurethane) (Column 8, lines 56-58). Town teaches the primary sealant may (optionally) be hardened/cured prior to applying the secondary sealant (Column 10, lines 56-28). Town teaches the secondary sealant may comprise materials exhibiting good moisture resistance such as silicone (thermosetting) resins and urethane adhesives (Column 9, lines 5-7).

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Regarding the limitations of a primary sealant that is flowable and a secondary sealant that is non-flowable, as noted above applicants specification describes the primary sealant as one of **hot melt butyl, polyisobutylene, or curable hot melts** and the secondary sealant as a thermoset selected from one of **silicone, polysulfide, or polyurethane sealants**. Town teaches the primary sealant may comprise thermoplastic materials (e.g. **polyisobutylene**) or thermosetting materials (e.g. **silicon or polyurethane**). Town further teaches the secondary sealant may comprise thermoset materials (e.g. **silicone or polyurethane**). Thus, Town teaches the **same** primary and secondary sealant materials as those disclosed by applicants specification such that Town clearly meets all of the limitations regarding the sealant materials.

Claim Rejections - 35 USC § 103

7. Claims 2, 3, 8, 10, 19-23, 25, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Town as applied above in paragraph 6, and further in view of Hodek et al. (U.S. Patent 5,655,282).

As shown above, Town teaches all of the limitations in claims 2, 3, 8, 10, 19-23, 25, 30, and 31 except for a teaching on using a foam spacer and a teaching on using primary sealants such s hot melt butyl or low permeable sealant. Hodek et al. are directed to an insulating glazing unit. Hodek et al. teach a pair of glass sheets separated by a spacer wherein the spacer is located inward from the perimeter of the glass sheets forming an outwardly-facing channel and an inward, insulating chamber (Figure 10 and Column 3, lines 21-29 and Column 7, lines 60-63). Hodek et al. teach first (154 of Figure 10) and second (155 of Figure 10) sealants applied to the spacer and glass sheets to provide a moisture barrier (Column 7, lines 63-66 and Column 8, lines

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24-28). The first sealant may comprise a butyl adhesive (Column 11, line 31) including polyisobutylene (Column 11, lines 40-41), and/or a low permeable sealant (Column 8, lines 16-20). The second sealant may comprise a structural sealant made of a thermoset such as silicone (Column 8, lines 24-28). Hodek et al. further teach that it is well known in the art to use both foam and metal spacers carrying a desiccant (Column 4, lines 37-41 and 66-67), and it is known to use a spacer with a pair of notched corners (Figure 1).

Regarding claims 2, 3, 19, and 30, as shown above Hodek et al. teach that it was known to use a foam spacer carrying a desiccant, and one of ordinary skill in the art at the time the invention was made reading Town in view of Hodek et al. would have readily appreciated using in the method of Town a foam spacer as suggested by Hodek et al. as only the expected results would be achieved.

Regarding claims 8, 10, and 20, as shown above Hodek et al. teach primary sealants comprising butyl adhesive and low permeable sealant applied to the spacer and glass sheets. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made reading Town in view of Hodek et al. would have readily appreciated using in the method of Town primary sealants comprising butyl adhesive or low permeable sealant as suggested by Hodek et al.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Town as applied above in paragraph 6, and further in view of Schlienkamp (U.S. Patent 4,519,962).

As shown above, Town teaches all of the limitations in claim 15 except for a teaching on using first and second sealant stations comprising first and second application nozzles to apply the sealants. Schlienkamp teaches a method and system for sealing the edges of insulating-glass

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panels. The sealing method of Schlienkamp is a continuous process wherein a glass pane is conveyed to a sealing station (Column 3, lines 23-27). A sealing nozzle then applies adhesive to the entire perimeter of the glass pane (Column 3, lines 42-44). It would have been well within the purview of one of ordinary skill in the art at the time the invention was made apply the sealants taught by Town using multiple sealant stations of the type suggested by Schlienkamp as only the expected results would be achieved.

9. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Town as applied above in paragraph 6, and further in view of Battersby (U.S. Patent 3,759,771).

As shown above, Town teaches all of the limitations in claims 16 and 17 except for a teaching on using a device comprising first and second applicators wherein the second applicator trails that of the first to apply the sealants. Battersby is directed to a method of making an insulating glazing unit (double glazing unit) (Column 1, lines 54-63). Battersby teaches providing a pair of glazing sheets separated by a spacer wherein the spacer (free of sealant) is spaced inwardly from the perimeter of the sheets forming an outwardly facing channel and in inward insulating channel (Figures 1 and 5-7 and Column 2, lines 24-29 and 57-60). Battersby teaches sealing the insulating chamber by simultaneously applying a first and second sealant into the provided outwardly facing channel. The sealants are applied through an applicator with two heads wherein the second applicator head trails the first, thus the second sealant covers the first (Figures 2-4 and Column 2, lines 63-71 and Column 3, lines 1-2 and 11-17 and 40-45).

Battersby teaches that the first and second sealants may be different (Column 4, lines 16-23), and the sealants comprise a wide variety of materials including polyisobutylene, polyurethane, and thermosets (Column 3, lines 62-63 and Column 4, lines 7 and 12-13). Battersby teaches that the

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sealants prevent the entry of dust and/or moisture into the insulating chamber (Column 2, lines 30-34). Battersby further teaches that the spacer may be formed of metal, plastics, or wood and may include a desiccant (Column 2, lines 40-44), and the spacer may have notched corners between the glazing sheets and the spacer with the first sealant applied in the notched corners (Figures 2-6 and Column 2, lines 45-56).

Regarding claim 16, it would have been well within the purview of one of ordinary skill in the art at the time the invention was made to apply the sealants taught by Town using a device comprising first and second applicators wherein the second applicator trails that of the first as suggested by Battersby as only the expected results would be achieved.

Regarding claim 17, it is noted that in the method and apparatus of Battersby a retractable applicator nozzle is not necessary. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a retractable first nozzle if the nozzle would disturb the application of the second sealant.

Response to Arguments

10. Applicant's arguments filed 3/12/04 have been fully considered but they are not persuasive.

Applicant argues, "The prior art Town reference cited by the Examiner uses a non-flowable sealant as its primary sealant. The sealant used at location #26 must be a non-flowable sealant because sealant #26 is used to hold film 34 taut as described at col. 10, lines 35-38. A flowable sealant will not hold a film taut in the manner described in the Town reference. Town thus teaches a sealant configuration that is opposite to the claimed configuration and does not

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anticipate or render the claims obvious. The addition of the Hodek reference does not render the claims obvious.” The 35 USC 112 rejections in paragraphs 3-5 are noted. Furthermore, regarding the limitations of a primary sealant that is flowable and a secondary sealant that is non-flowable, as noted above applicants specification describes the primary sealant as one of **hot melt butyl, polyisobutylene, or curable hot melts** and the secondary sealant as a thermoset selected from one of **silicone, polysulfide, or polyurethane sealants**. Town teaches the primary sealant may comprise thermoplastic materials (e.g. **polyisobutylene**) or thermosetting materials (e.g. **silicon or polyurethane**). Town further teaches the secondary sealant may comprise thermoset materials (e.g. **silicone or polyurethane**). Thus, Town teaches the **same** primary and secondary sealant materials as those disclosed by applicants specification such that Town clearly meets all of the limitations regarding the sealant materials. Additionally, it is noted Town teaches the primary sealant may only optionally be hardened/cured prior to applying the secondary sealant, and as to the primary sealant holding the film taut, Town teaches it **both** the spacers (primarily) and primary sealant that hold the film taut.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

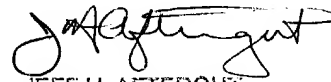
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff
April 2, 2004



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